

ABSTRACT OF THE DISCLOSURE

A current-in-plane magnetic sensor comprises a sensor stack including first and second layers of ferromagnetic material, a first nano-oxide layer positioned adjacent to the first layer of ferromagnetic material, and a layer of non-magnetic material positioned between the first and second layers of ferromagnetic material, wherein the thickness of the non-magnetic layer is selected to provide antiferromagnetic coupling between the first and second ferromagnetic layers, a magnetic field source for biasing the directions of magnetization of the first and second layers of ferromagnetic material in directions approximately 90° with respect to each other, a first lead connected to a first end of the sensor stack, and a second lead connected to a second end of the sensor stack. Disc drives that use the current-in-plane magnetic sensor are also included.